

Remarks/Arguments

Collectively, all of the cited prior art references are totally unrelated, and do not anticipated the teaching (anti-piling agent) of our invention.

The utilization of high molecular weight polyethylene oxide (HMW-PEO) in the prior art are specifically directed towards an alcohol (isopropanol-toxic/volatile) substitute, wetting out the hydrophilic part (non-ink image) of the aluminum plate, or for improving the ink transfer properties of aqueous printing inks. There is no hint of using HMW-PEO as a anti-piling agent in any of the cited literature, nor could we find any reference in the open literature suggesting this polymer for this specific usage. If it was obvious, it would most likely would have been disclosed in patents or the literature.

Prior to current paper making practices, piling was not a serious problem as it is today. At present, piling is causing problems due to the more extensive loading of paper with calcium carbonate and other fillers to reduce costs, and the very high speeds (3-5,00 feet/minute) printers run today. It turns out that HMW-PEO works exceedingly well as a anti-piling agent, while other hydrophilic polymers like polyacrylamide, carboxy methylcellulose, gum arabic, etc. do not behave similarly as a anti-piling agent indicating a unique chemical/physical property unique to HMW-PEO, but not inherent at in other water-soluble polymers used in fountain solutions for other purposes.